

NEW CHAIN-CABLE TESTING MACHINE.—In order to obviate the expense, delay, and other inconvenience arising from a return of cables tested only at Liverpool, Messrs. Dunn and Elliot, of the Windsor-bridge Iron-works, Manchester, have invented a simple machine of their own, which consists of a horizontal iron cylinder, 6 feet long, in which works a piston. At the end of the cylinder, and continuing in the same right line, is an iron trough or pipe, which may be lengthened or contracted at pleasure. At the end of this trough are a pair of iron claws, to which one end of the chain to be tested is fastened, while the other is fastened to the end of the piston-rod by similar claws. Water is then forced by a double hydraulic pump into the cylinder, between the bottom of the piston and the water-tight end of the cylinder next to the trough, which forces the piston to descend the cylinder, stretching and testing the chain. Thus a gradual and constant increase of pressure is obtained, and there is no severe or dangerous rebound. The peculiar advantage of the new machine, however, is the combination of the hydraulic press with a contrivance for registering the pressure exerted. When the water is forced into the cylinder, a ram lifts up a scalebeam with different weights, or sliding the same weight, as on a steelyard, so that the intensity of the pressure can be accurately measured. The machine is capable of testing with any pressure from a half-hundred weight to 100 tons. Its cost is only about 200*l.*, while the corporation machine at Liverpool, whose testing power does not exceed that of Messrs. Dunn and Elliot's machine, cost 1,000*l.*, and is about six times the weight and three times the bulk.

MOVING A HOUSE.—Within the last fortnight the Americans have been outdone in this kind of work at Messrs. Ransome and May's, Orwell Foundry, Ipswich, where a brick-built house, two stories high, 26 feet by 18, has been moved a distance of 70 feet, and raised 2½ feet, without sustaining the slightest crack in the walls or ceilings, or even in the papering of the rooms. The removal was accomplished under the direction and superintendence of Mr. Worby, the manager of the works; and the *modus operandi* seems to have been this: A series of holes, 6 inches square, was first made through the brickwork, close to the ground, at intervals of 3 feet, all round the house. Through these holes were inserted cantilevers, or pieces of timber about 4 feet long, and the earth, inside and out, having been cleared away, the ends were made to rest on blocks of wood; so that during the removal of the foundation, the superstructure would rest entirely on them. The next operation was to remove the foundation, and to lay in its place long pieces of timber, 11 inches square: these had a coat of mortar laid on as a bed for the brickwork, and were then lifted up to the walls, forming a kind of framework, on which the cantilevers and blocks being removed, the house stood as firmly as it did on its original foundation. The building was then raised to the required height, one side being elevated at a time, and a number of longitudinal timbers of great strength laid underneath, and continued along the ground as far as the new foundation. As a precautionary measure, the sides of the house were bound in by means of stout planks run up at the angles, and fastened together with iron rods. The whole of this preliminary work occupied some time to complete, the workmen only turning to it when they had nothing else to engage them. The timbers, along which the house was to slide, having been well greased, three bottle-jack screws were brought to bear upon one end of the framework, and the process of locomotion commenced. The rate of travelling was about one foot in five minutes, but as a long delay occurred each time the screws were re-fixed and got into play, not more than 25 feet could be accomplished in a day. The house is now standing on its second foundation, none the worse for the experiment to which it has been subjected.—*Suffolk Chronicle*.

THE PUBLIC HEALTH BILL has at length made its way through the fiery ordeal of the Commons, after a most tedious and innumerable series of stoppages and alterations, that threatened to swamp it altogether. The Lords will surely not go over the same ground of opposition whence it has so narrowly escaped out of the Commons.

BLIND BUILDERS.—The inclosed tenders were delivered on the 22nd June for erecting three villas, with stabling to each, at Penge, Surrey. Mr. Joseph Springbett, architect:—

Barrett	£3,111
Walker and Soper	3,098
Fowler	2,755
Tombs	2,666
Willson	2,605
Booth	1,935

For alteration to the Wheat Sheaf, Paddington; Mr. J. F. Bush, surveyor:—

Ebbs	£410 0 0
Green	408 15 0
Sanders	373 0 0
Chesterman	248 0 0

TURNPIKE-LOCOMOTIVES.—The determined perseverance of mechanicians in expensive experiments, which, for a quarter of a century, have uniformly proved abortive, is, to say the least of it, admirable, and merits something else than that loss of fortune with which it has hitherto been exclusively rewarded. Amongst the chief of those persevering geniuses who must have so very strong a conviction of the practicability of what, by the uninitiated public, judging merely from the want as yet of practical fruits, has been so decidedly put down as quite impracticable, foremost in the enthusiastic corps is Sir James Anderson, who, it appears, so far from having allowed the fruitless expenditure of a fortune to discourage him or excite despair, is now more wedded to his first love than ever, and "has, he believes, succeeded at length in producing such a boiler" as has so long been the indispensable desideratum,—a boiler to wit, which will rapidly produce the most dense, high pressure steam, without bursting, and yet without any unnecessarily cumbrous bulk or weight. This, we remember, was precisely the desideratum 25 years ago; and our only fear is that when this grand desideratum shall have been accomplished, another desideratum will forthwith start into existence, namely, that of a public willing to take their seats in the near vicinity of steam so dense, and a boiler so handy. We should be sorry indeed, however, to damp the ardour of a faith so noble by evil prognostications, or by flippant sarcasms such as have but too often been shot at this very mark. We have ourselves partaken of the enthusiasm of its projectors, and enjoyed a seat in their wondrous vehicles, and we should probably have our own old faith revived by a successful run on the high road as of old, even at the risk of an unceremonious *entree* through some garden hedge by the highway, as once occurred to us, or at the far more serious risk of a cracked skull, generated by legitimate sequence, from a boiler similarly cracked, as we may yet have to experience. In two or three weeks a new locomotive will be ready, it is said, to run on the Hounslow-road, when we wish it may meet with all that success which indomitable perseverance and ingenuity merit.

TRANSMISSION OF SOUND.—During a recent lecture delivered by Dr. Faraday, at the Royal Institution, two remarkable experiments were exhibited, with a view to show peculiarities in the transmission of electricity. A long strip of wood was suspended from the ceiling of the lecture-room, touching a wooden box at one end. A tuning fork was struck and applied to the other extremity of the connected strip of wood, when presently a loud musical note issued from the box, though the sound of the fork at the other end was inaudible. The next experiment was still more curious. A rod connected with a piano-forte in a room beneath came through the floor of the lecture-room, and on the top of the rod Dr. Faraday applied a guitar to act as a sounding board. When the piano was played, the sound seemed to issue from the guitar as loudly as if the instrument were in the room, but the instant the connection was broken between the rod and the guitar no note could be heard. Another analogy between vibrations producing sound and electricity is the sensation, resembling that of an electric shock, communicated on touching a vibrating bar of metal, or a vibrating string. The school trick of fixing a wet string or piece of tape round the waist, and then pulling it through the fingers, was practised by Dr. Faraday on his assistant, for the purpose of showing how readily the sensation of an electric shock may be imitated by vibrations.

EXPENSE OF CONTRACT-TENDERS.—"One of the Trade" at Birmingham complains in the local *Journal* of an evil but too frequently and reasonably complained of in *THE BUILDER*, namely, the inconsiderate, or rather the unjust and dishonest practice of putting builders to the expense of taking out quantities on plans and specifications not previously reduced to a scale befitting the views or means of committees or individuals employing architects and builders. While suggesting "a removal of the evil, either by an organisation amongst architects and builders generally, or by some other means," the complainant asks "why a number of tradesmen should be put to an expense to give that information to a proprietor which he ought, through his architect, to be in possession of himself? If he is not satisfied with the opinion given by his architect, let him as a check submit the plans to some respectable building surveyor for a rough estimate of the probable cost of the building, which, without going too much into detail, could be easily made out, and then let him determine whether he intends to build or not. A proprietor would find his advantage in so doing, for when it is known that the money is ready, and that the building will really be erected, the inducement to tender becomes greater, which of course tends to the benefit of the proprietor. I should recommend builders," he adds, "to discountenance and decline giving estimates in all cases, unless their expenses are secured in case the plan should not be carried out. I would respectfully suggest to architects generally that they should recommend, and to proprietors, in particular, that they should adopt, the principle herein referred to."

THE ROTARY STEAM-ENGINE.—A patent has been secured for an American inventor of a new kind of rotary-engine. It consists of a "piston-wheel," on which a number of pistons are radially disposed in tangential curves, working steam-tight against the inner circumference of the cylinders. Around the periphery of the cylinder are openings, one less than the number of pistons, in which are slide stops, passing into the cylinder. The peculiar form of the pistons enables the stops gradually to recede from the interior of the cylinder, till they become flush with the surface, and allow the pistons to pass them, when they are again projected into the cylinder, to act as a surface against which the steam propels the piston-wheel forward.

LABOURERS' COTTAGES.—A correspondent remarks,—"I have with care examined the plans for cottages, for agricultural districts, issued by the society for improving the conditions of the labouring classes; and as a constant reader of your valuable journal, I beg to remark that if the closets and wash-houses were built independent of the dwelling, it would, I am certain, be a source of cleanliness and comfort to the working classes, which I have every reason to believe is the principal object of the benevolent society to establish. The reason for this remark is as follows:—The steam arising from boiling water, and the effluvia from pig's food, and many other things I could mention, are disagreeable, notwithstanding any precaution which may be taken. I am myself daily with many of the labouring classes, and speak from experience."

FRENCH PICTURE OF FRENCH EVENTS.—A clever picture, by Philippoteaux, of the events of Paris in February last, is about to be exhibited at the Egyptian Hall, Piccadilly. It is 22 feet wide by 12 feet high, and represents the Place de l'Hotel de Ville, with M. De Lamartine at the head of the Provisional Government, addressing the people. Although in the name of Philippoteaux, it is evidently the work of several hands; and even admitting this, the rapidity with which it has been produced is very remarkable.

PENNING'S NEW SYSTEM OF SLATING seems to us (although we have not had practical experience of it) well calculated for many cases wherein economy is desired: fewer slates and less timber are required than for the present method. The invention is not patented; and the inventor is seeking some return, for the time he has bestowed on the subject, by the publication of instructions for executing it.*

* At No. 2, York-street, Covent Garden.